

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for generating a graphical image on a display from data describing at least one object, the display including a plurality of positions, each of the plurality of positions having an area, the method comprising the steps of:

(a) determining if a portion of an object of the at least one object intersects a current position of the plurality of positions and providing an output if the portion intersects the current position;

(b) providing a mask for the portion if it is determined that the portion intersects the current position, the mask indicating an extent to which the portion occupies the area of the current position;

(c) using the mask to provide antialiasing for the portion at the current position;

(d) repeating steps (a)-(c) for each remaining object of the at least one object at the current position; and

(e) repeating steps (a) through (d) for each remaining position of the plurality of positions once step (d) is performed for the current position;

thereby allowing the graphical image to be rendered position by position in raster order;

wherein each of the plurality of positions is a pixel and wherein the current position is a current pixel on the display.

2. (Currently Amended) The method of claim 1 wherein the current position includes a plurality of subareas, wherein the mask indicates a portion of the plurality of the subareas that are occupied by the portion of the object, and wherein the utilizing step (c) further includes the steps of:

(c1) using the at least one mask to blend information relating to the at least one portion for the portion of the plurality of subareas.

3. (Original) The method of claim 2 wherein the plurality of subareas further comprise a number of subareas and wherein the utilizing step (c) further includes the steps of:

(c2) summing the information for each of the plurality of subareas to provide a resultant; and

(c3) dividing the resultant by the number of subareas.

4. (Previously Canceled)

5. (Currently Amended) The method of claim 1 further comprising the step of:

(f) removing the portion of the object if the portion of the object is obstructed.

6. (Original) The method of claim 5 further comprising the step of:

(g) sorting each portion based on the z-value.

7. (Previously Amended) The method of claim 6 wherein the repeating step (d) further includes the step of:

(e1) repeating steps (a) through (c) and steps (f) through (g) for each remaining object.

8. (Original) The method of claim 7 wherein the repeating step (d) further includes the step of:

(e1) repeating steps (a) through (c) and steps (f) through (g) for each of the plurality of positions.

9. (Previously Canceled)

10. (Previously Amended) A system for generating a graphical image on a display from data describing at least one object, the system comprising:

a display including a plurality of positions, each of the plurality of positions having an area;

a processor block coupled with the display, the processor block for determining if a portion of each of the at least one object intersects a current position of the plurality of positions and providing an output if the portion intersects the current position;

an interpolator coupled with the processor block, the interpolator for interpolating the data and providing a mask for the portion, the mask indicating an extent to which the portion occupies the area of the current position; and

means for utilizing the mask to provide antialiasing;

wherein the at least one object are rendered by the interpolator and the mask utilizing means position by position in raster order; and

wherein the processor block provides the output for all of the at least one object intersecting the current position before providing an output for any of the at least one object intersecting a subsequent position;

wherein each of the plurality of positions is a pixel and the current position is a current pixel.

11. (Currently Amended) The system of claim 10 wherein the current position includes a plurality of subareas, wherein the mask indicates a portion of the plurality of subareas occupied by the portion, and wherein the utilizing means further includes:

means for using the mask to blend information relating to the portion of each of the at least one object for the portion of the plurality of subareas.

12. (Currently Amended) The system of claim 11 wherein the plurality of subareas further comprise a number of subareas and wherein the buffer is further used to sum the information for each of the plurality of subareas to provide a resultant and to divide the resultant by the number of the plurality of subareas.

13. (Previously Canceled).

14. (Currently Amended) The system of claim 10 further comprising:

means for sorting each ~~of the at least one~~ portion of each of the at least one object based on the z-value.

15. (Currently Amended) The system of claim 14 wherein the sorting means further comprise:

an obstructed object identifier/removal unit coupled with the processor block and the interpolator, in response to the output and without determining a precise axial position of the portion of each of the at least one object, the obstructed object identifier/removal unit identifies if the portion of each of the at least one object is visually obstructed and removes data relating to the portion of the at least one object if the portion of the at least one object is obstructed; and

a hardware sorter coupled to the interpolator and the buffer for sorting the ~~at least one~~ portion of each of the at least one object for the current position based on the z-value of the ~~at least one~~ portion of each of the at least one object.